

A hand-drawn sketch map of a site, likely a construction or survey area. The map includes several labeled features and areas:

- Top Left:** A label "R/C" with an arrow pointing towards the top right.
- Top Center:** A label "102-R,1" with an arrow pointing to a small circle.
- Top Right:** A label "105" pointing to a rectangular area, and another label "102-R,C" pointing to a larger rectangular area.
- Bottom Left:** A label "101-2" pointing to a small circle, and another label "101-3" pointing to a small circle.
- Bottom Center:** A label "101-4" pointing to a small circle.
- Bottom Right:** A label "102-1,C" pointing to a small circle, and another label "103-1,C" pointing to a small circle.
- Bottom Center:** A label "R.C" pointing to a small circle.
- Bottom Right:** A label "101-N" pointing to a small circle.

The sketch also shows various lines, including dashed and solid lines, and several small circles scattered throughout the area.

Through holes which accept electronic component leads

100

FIGURE 1a

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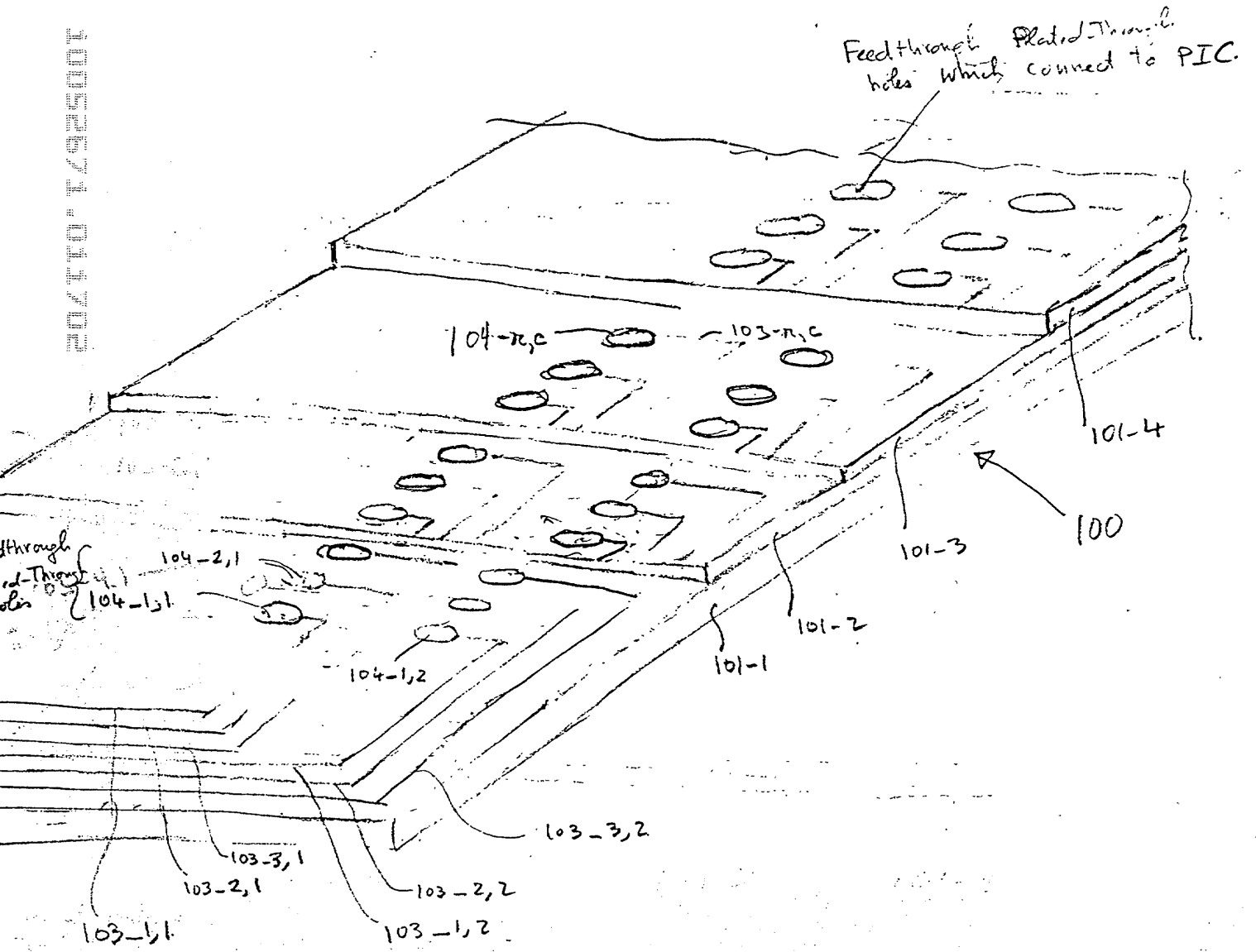
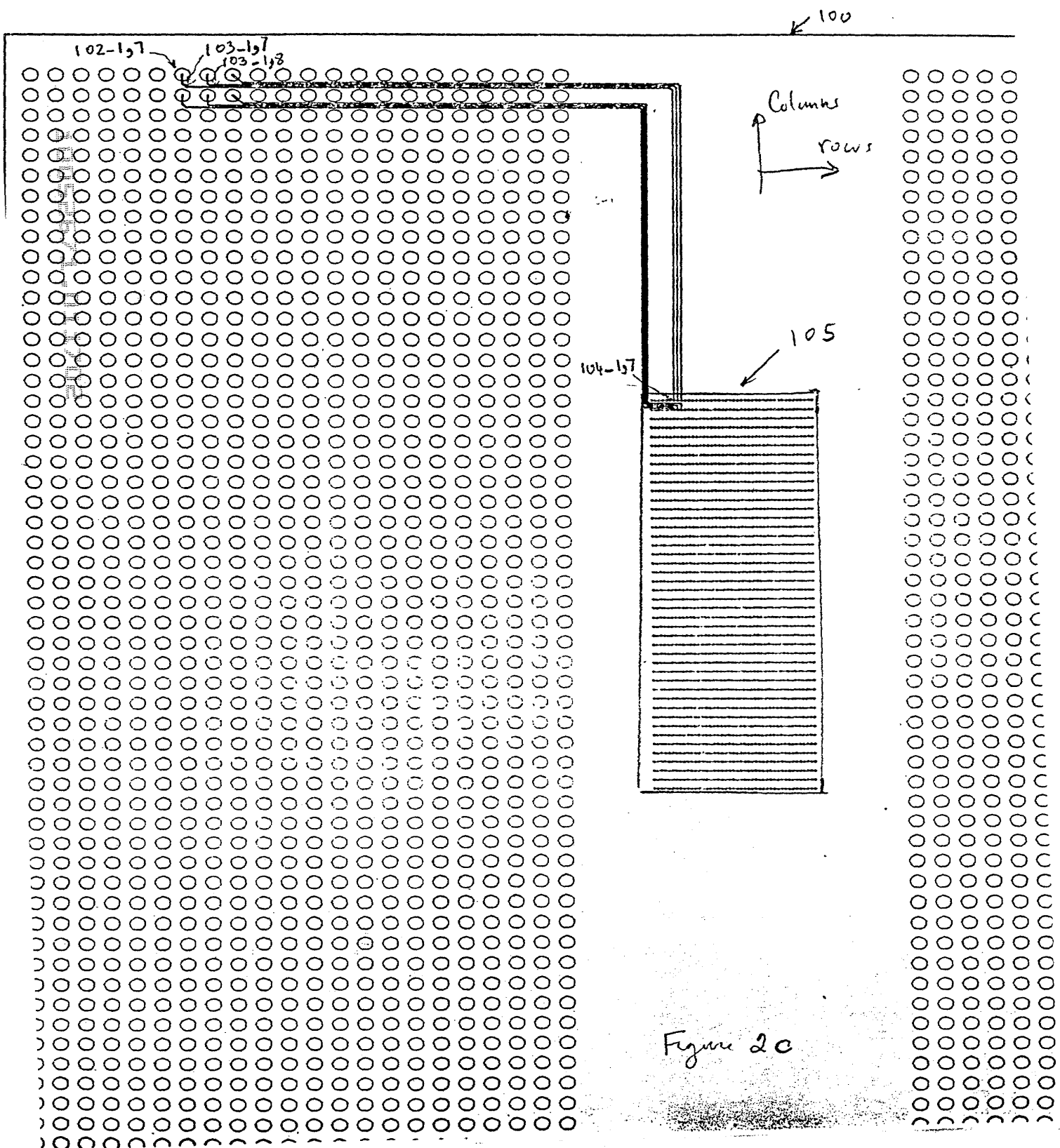
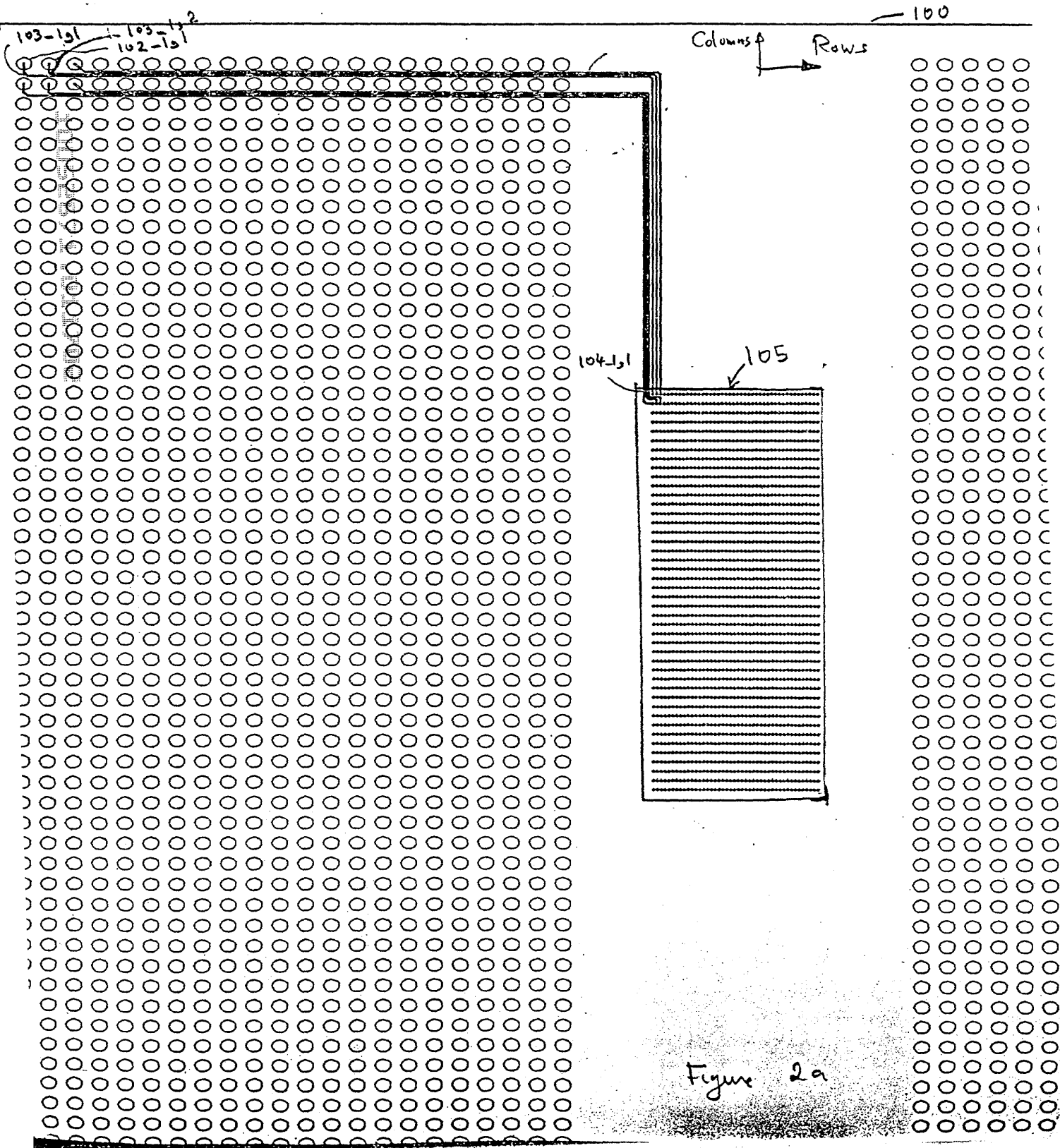
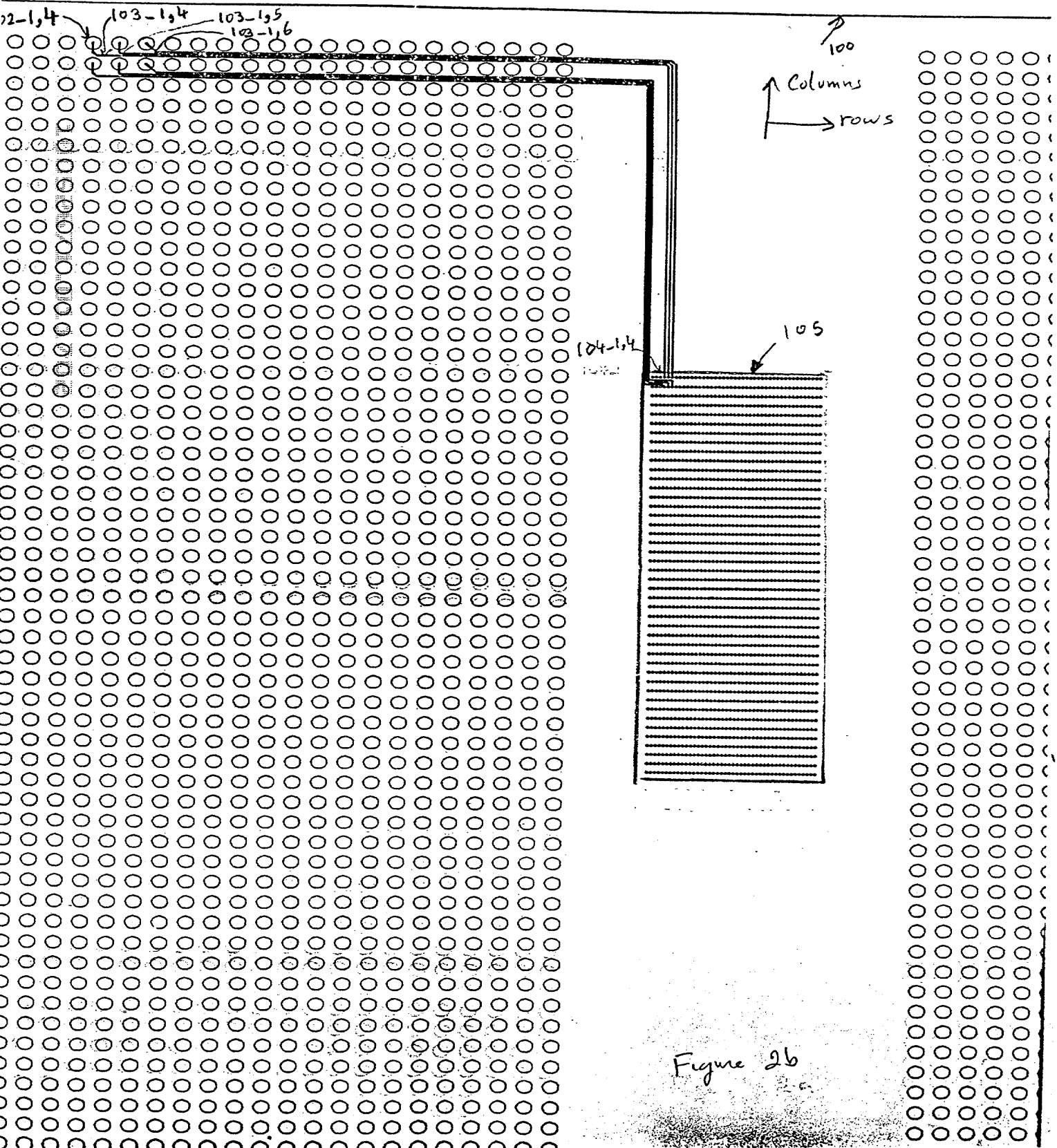
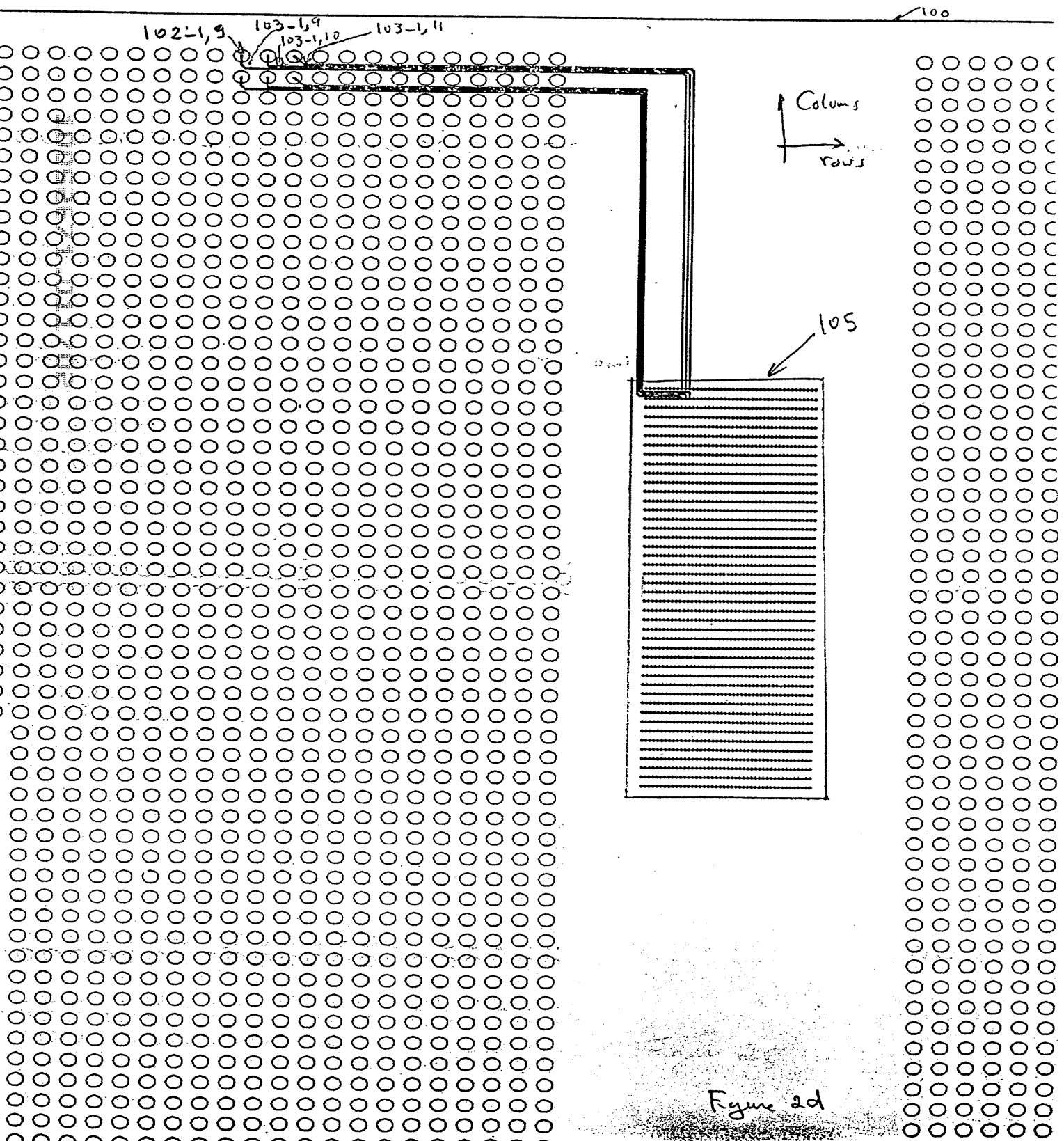


FIGURE 1B









GLOBAL INTERCONNECT ARCHITECTURE

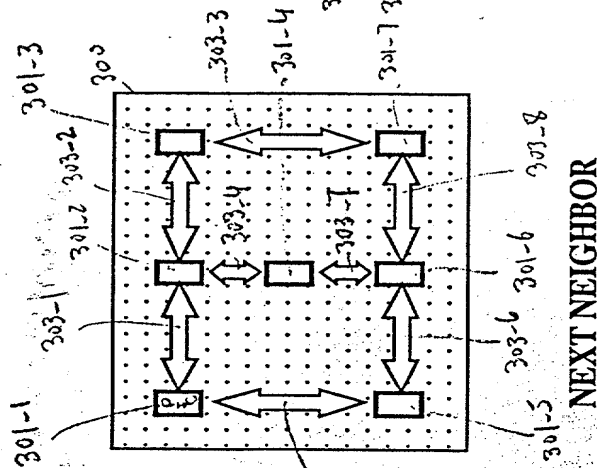


Figure 3a

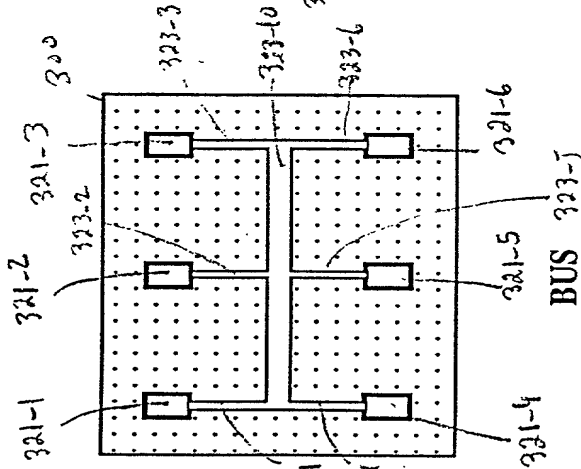


Figure 3c

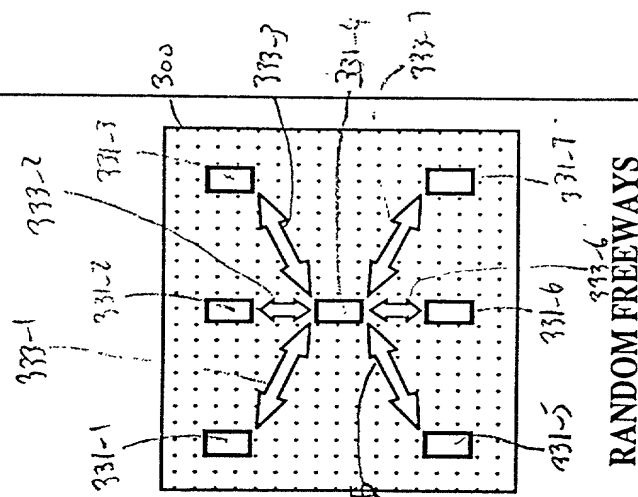


Figure 3d

Hierarchy of Global Transitions

20250012925001
FREIGHTWAY SYSTEM

Next Neighbor

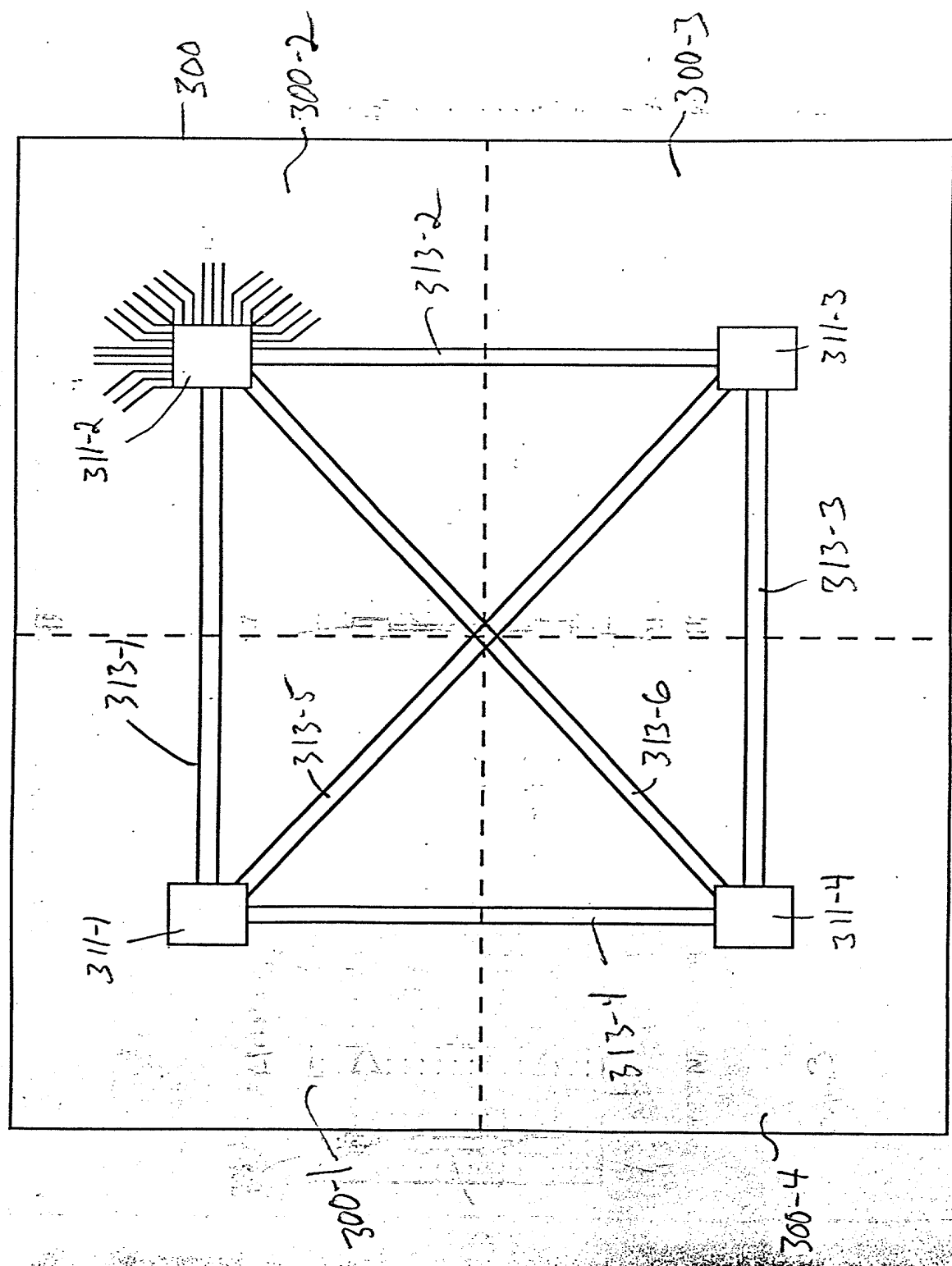


Figure 36

FIELD PROGRAMMABLE PCB

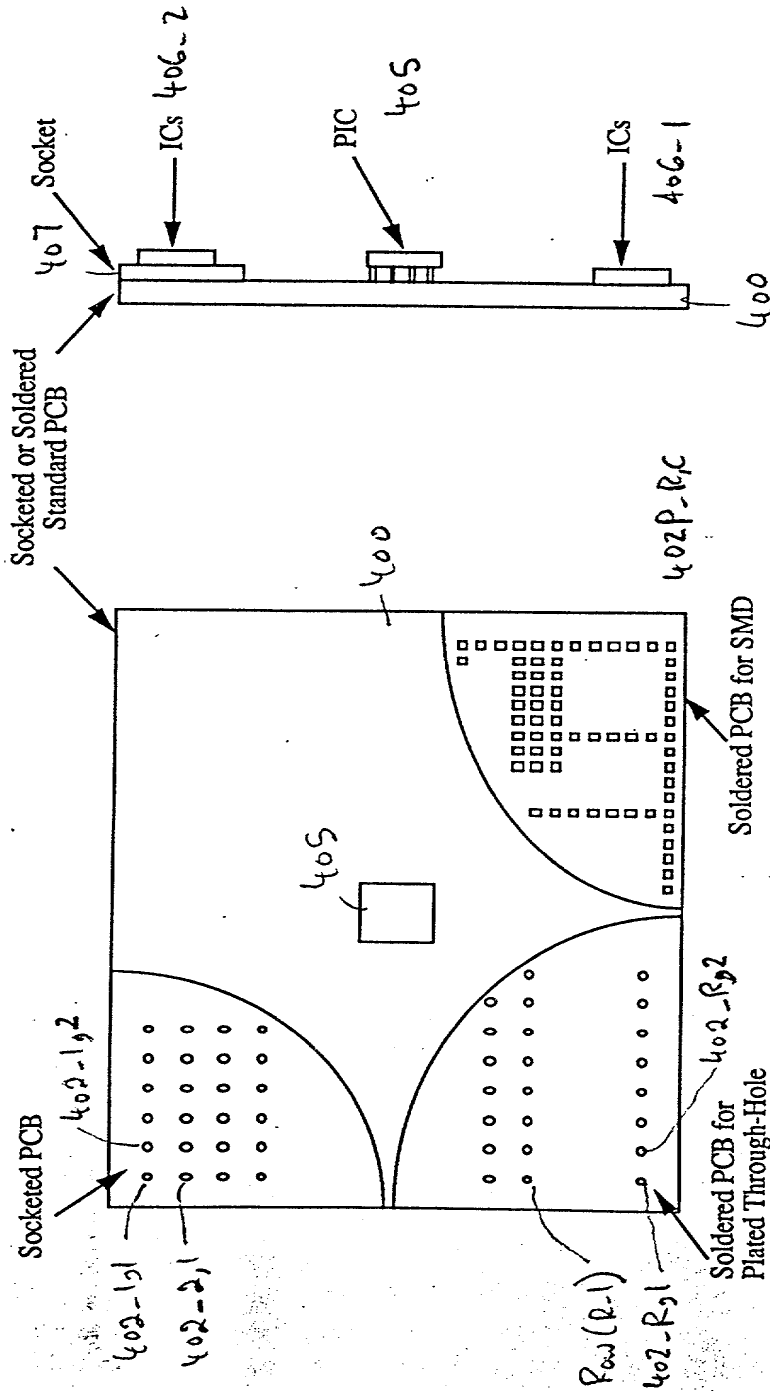


Figure 4a

Figure 4b

402-P,2C



407-P,2C

Figure 4c

402-P,2C

Continguit and TESTPORT/DIAGNOSTIC TOOL 202 FPO Y 2925001

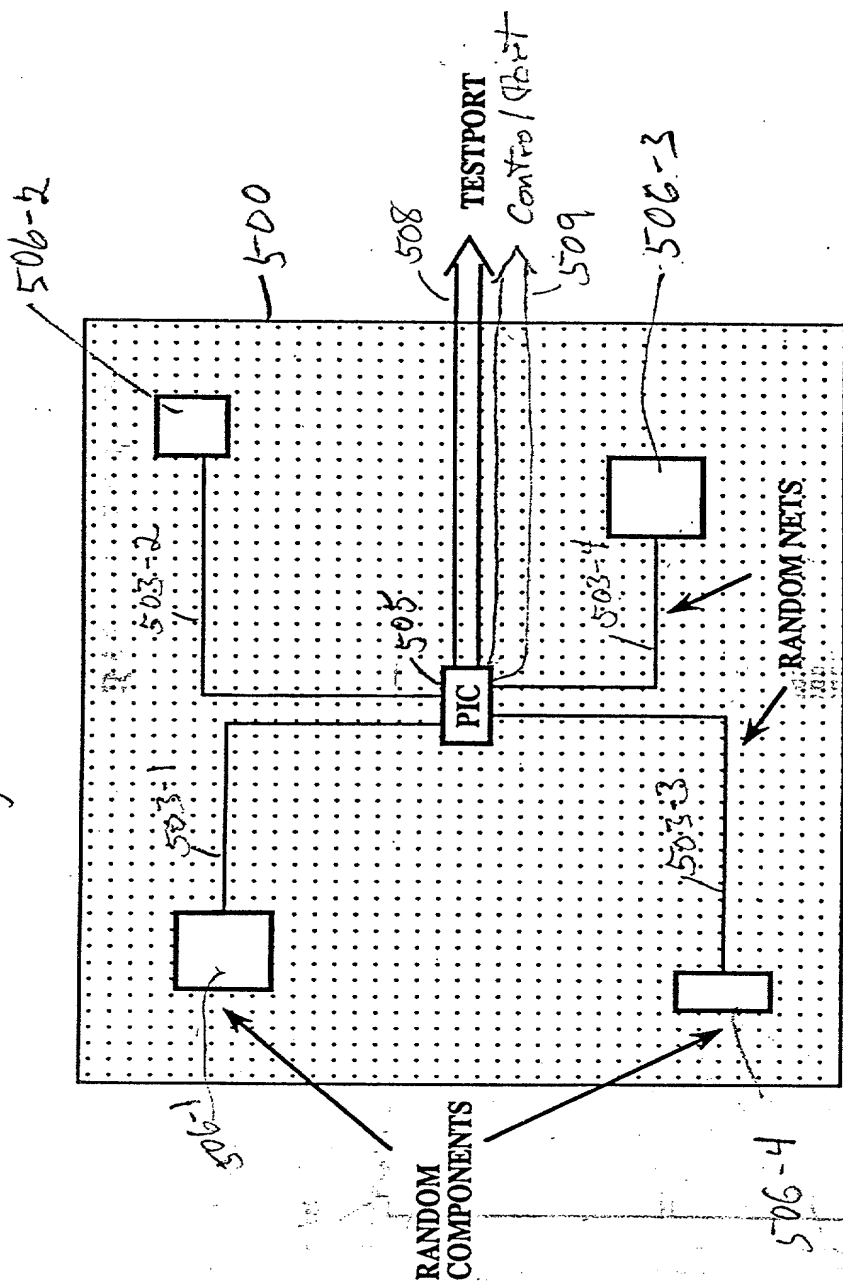


FIGURE 5

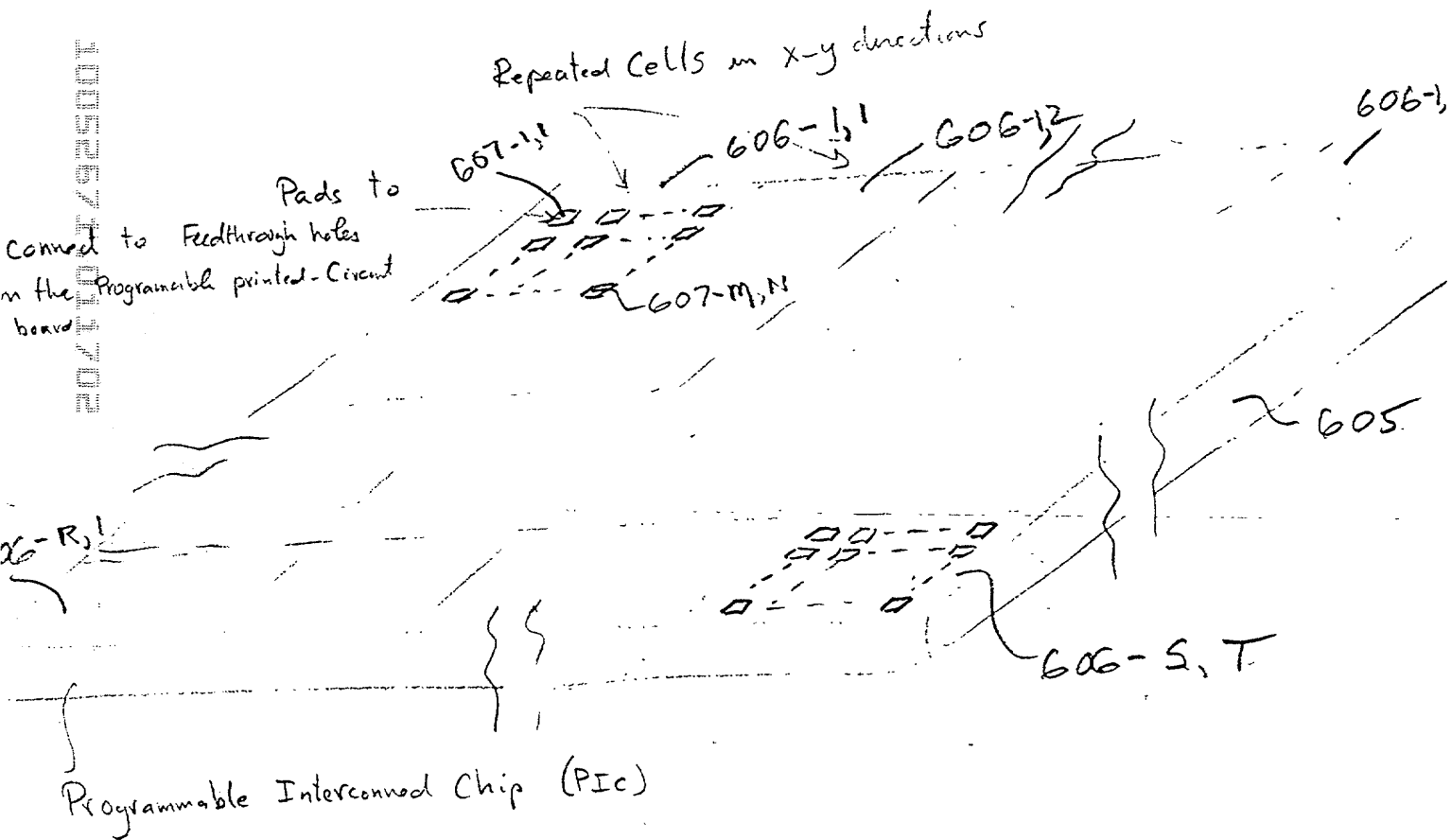


FIGURE 6a

Vertical Tracks
connected to Pad 1

Vertical Freeways
VF1
609-1
609-2
609-3
609-4

Cells

609-K

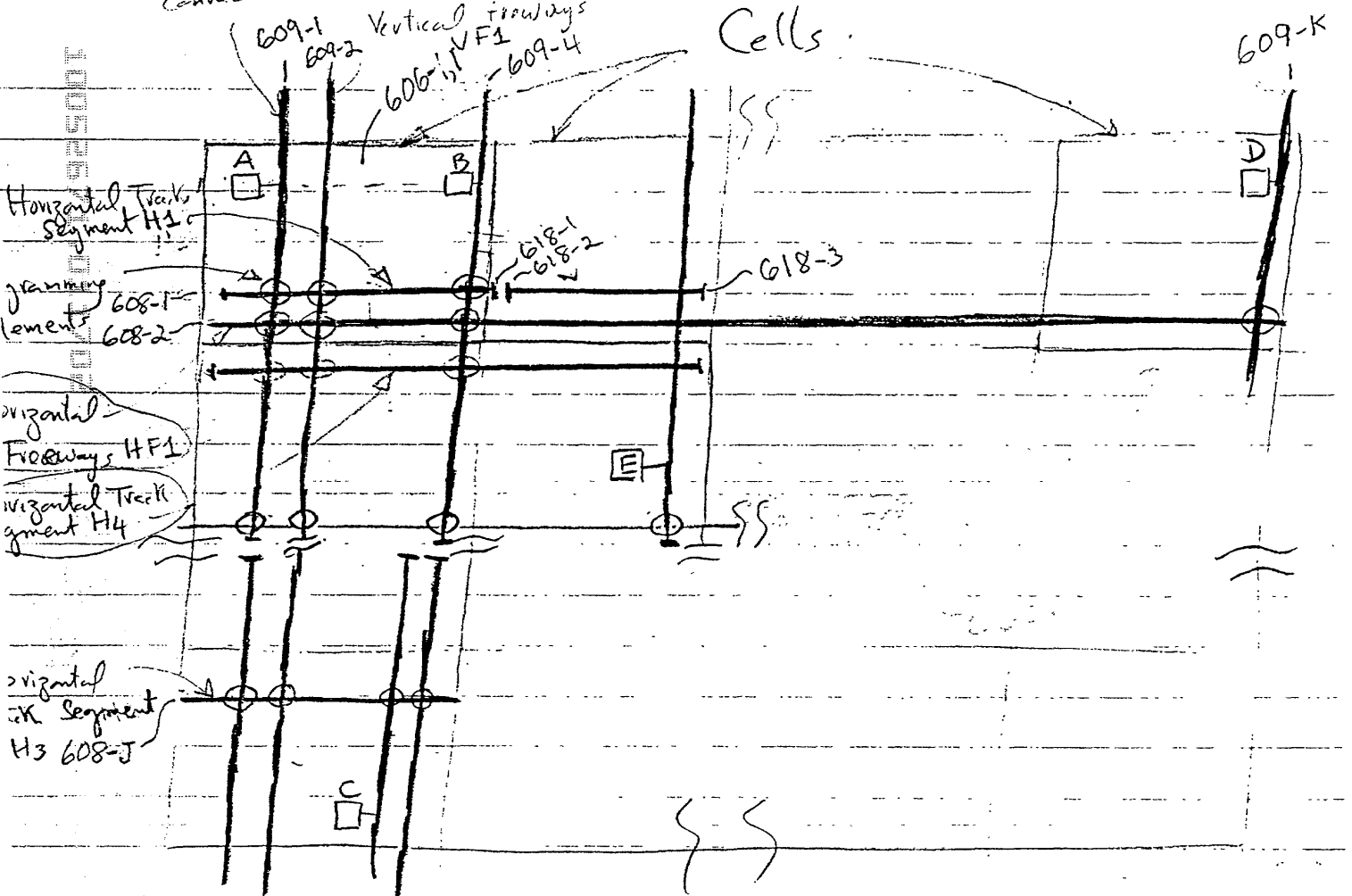
Horizontal Track
Segment H1

program
elements
608-1
608-2

Horizontal
Freeways HF1

Horizontal Track
Segment H4

Horizontal
Track Segment
H3 608-J

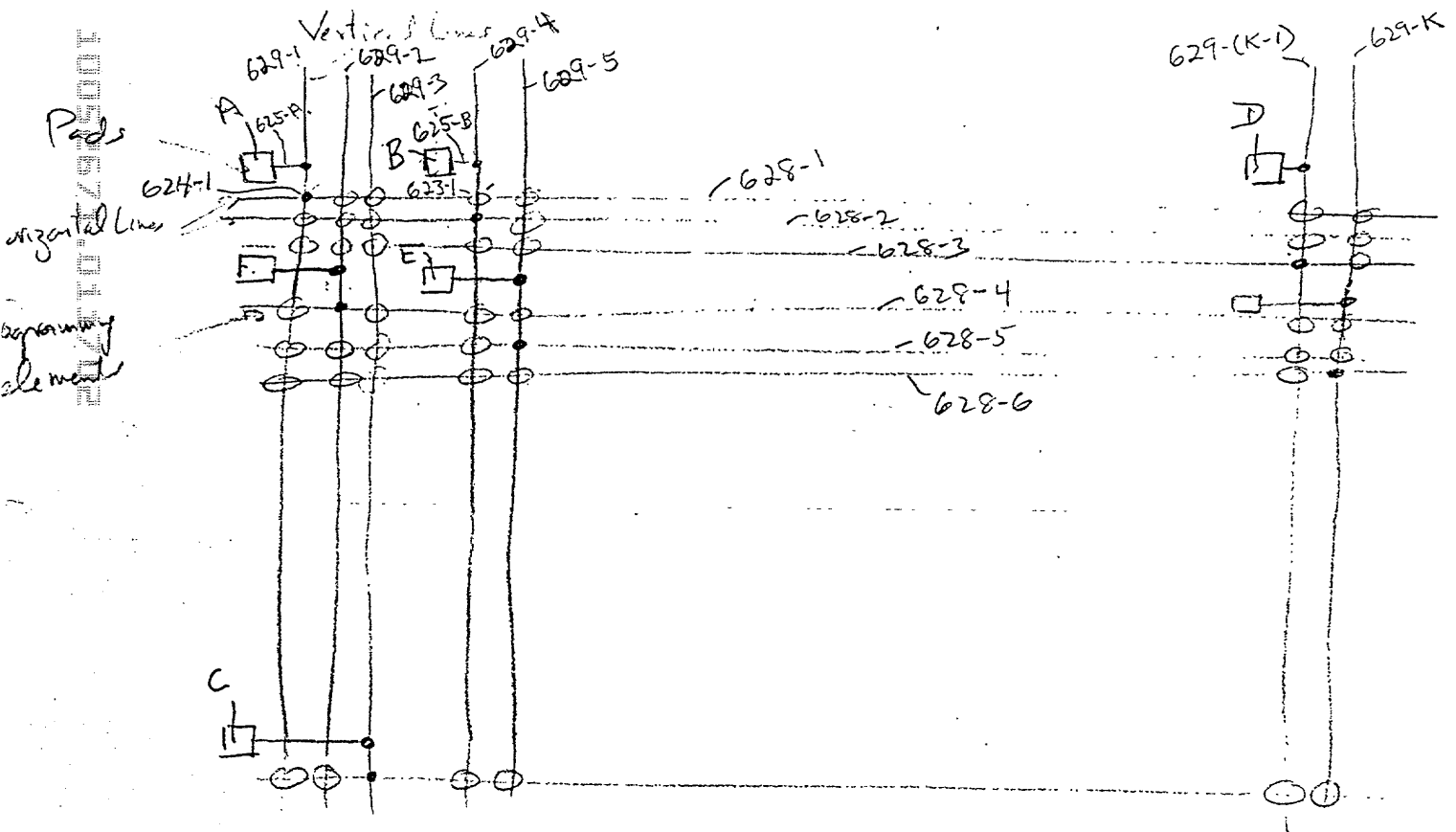


To connect A to B program elements at Intersects (A-H1) and (H1-B)
 " A to D " " " " (A-HF1) and (HF1-D)
 " A to C " " " " (A-H1), (H1-VF1),
 " " " " (VF1-H3) and (H3-C)
 " A to E " " " " (A-H4) and (H4-E)

Divided Cross-Point Switch-Matrix Array of the PIC

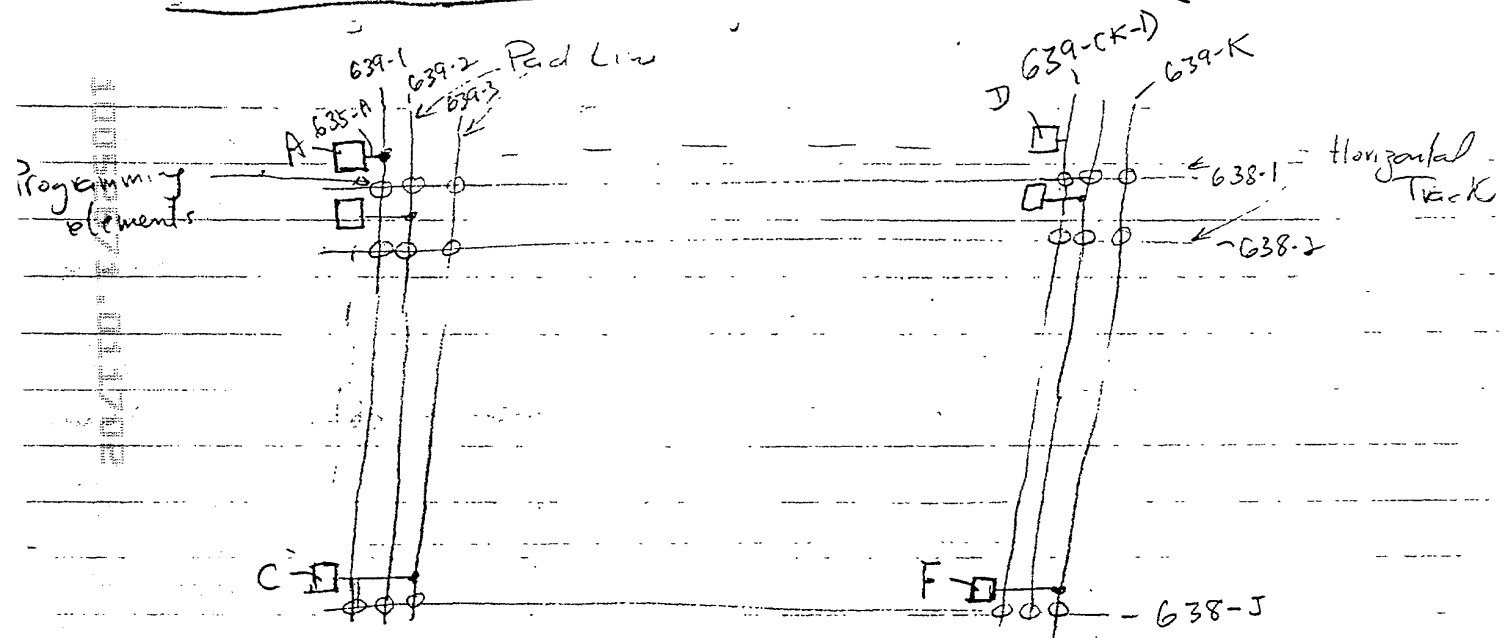
FIGURE 6B

Single Cross-point Switch-Matrix Array of PIC



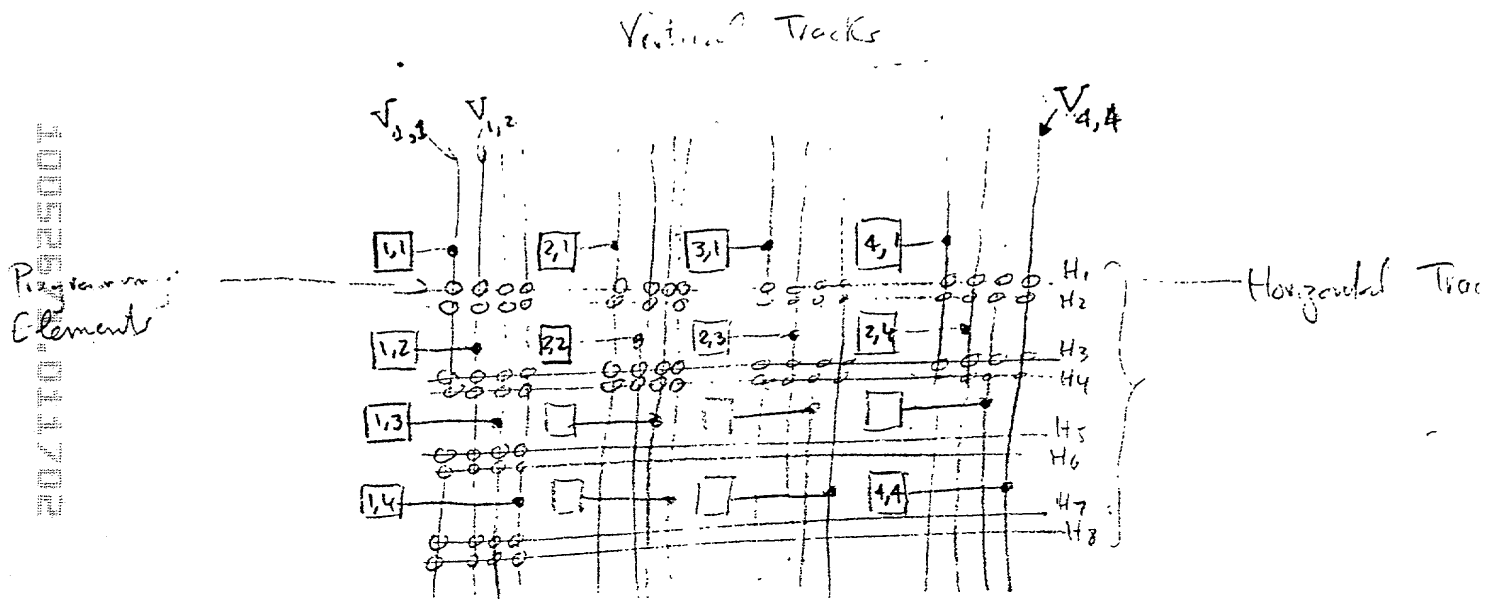
- Each pad connects to a vertical line.
- Each vertical is connected to a horizontal lines
- Connection of one pad to another include one programming element only
- Inefficient as number of pads become large (eg 100 - 300)
- Total number of programming elements = $(N_p \text{ of Pads})^2$

Single Cross-point Switch - Matrix Array of PIC



- Each pad connected to a vertical line
- Number of horizontal lines $\leq \frac{1}{2}$ number of vertical lines
- Connection of one pad to another include two programming elements
- Number of programming elements $\leq \frac{1}{2} (\text{Number of pads})^2$
- Inefficient as number of pads become large (For example above 200-500)

FIGURE 6d



Single Cross-point Switch-Matrix Array For 16 pads

To connect pad (1,1) to pad (4,1)

Program elements at Intersects of $(V_{1,1} - H_1)$ and $(H_1 - V_{4,1})$

To connect pad (1,2) to pad (4,4)

Program element at Intersects of $(V_{1,2} - H_3)$ and $(H_3 - V_{4,4})$

FIGURE 6E

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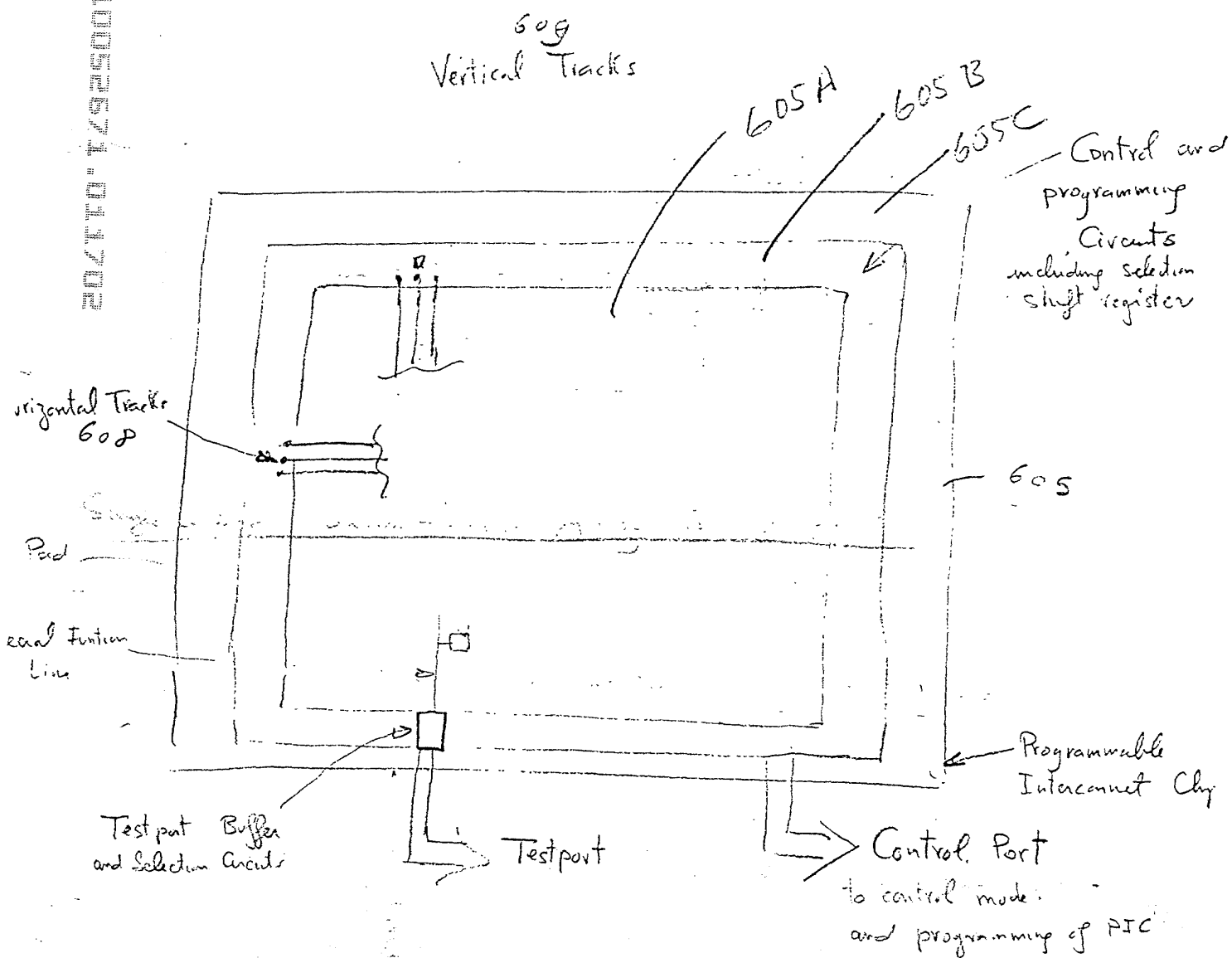
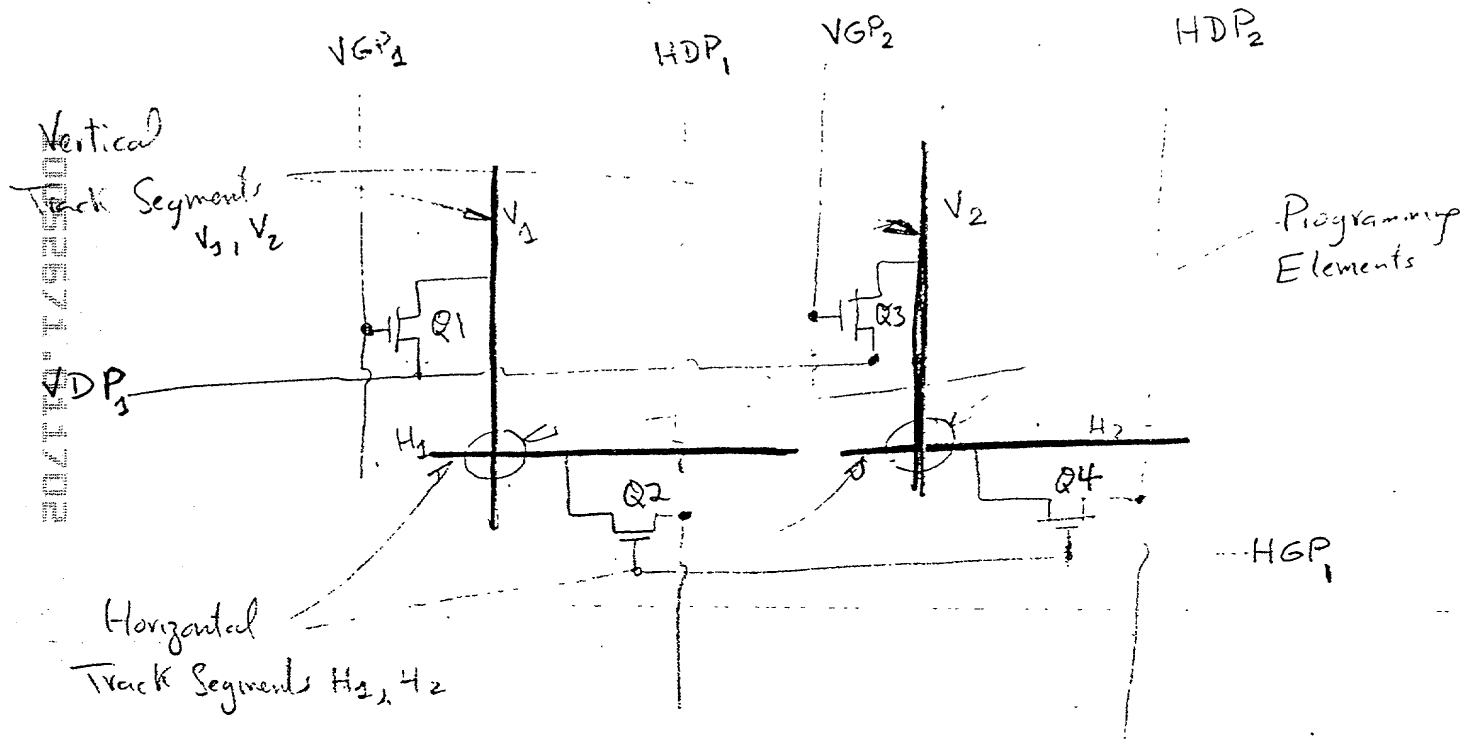


FIGURE 7a



Programming Scheme to select Horizontal and vertical segments in the PIC with only two transistor in Programming circuit path to allow current to reach hundreds of μ Amps.

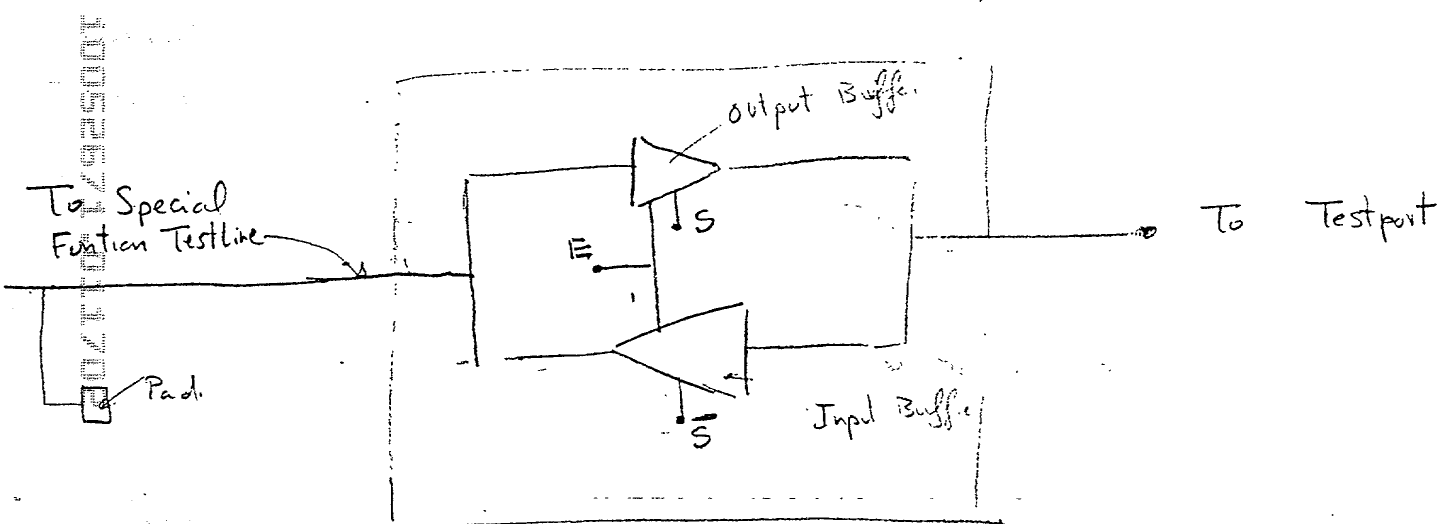
To program H_1 to V_1 , Take $VGP_1 = V_{GH}$, $VGP_2 = 0$, $VDP_1 = V_{PP}$
 $HGP_1 = V_{GH}$, $HDP_1 = 0$, $HDP_2 = 0$ or!

Where V_{PP} is the programming voltage ~ 15 to 50 Volts

V_{GH} is larger than V_{PP} by transistor threshold voltage ~ 1.8 to 5.3 Volts

Only Programming element at Intersect of track segments H_1 and V_1 see the full programming voltage V_{PP}

FIGURE 17.2



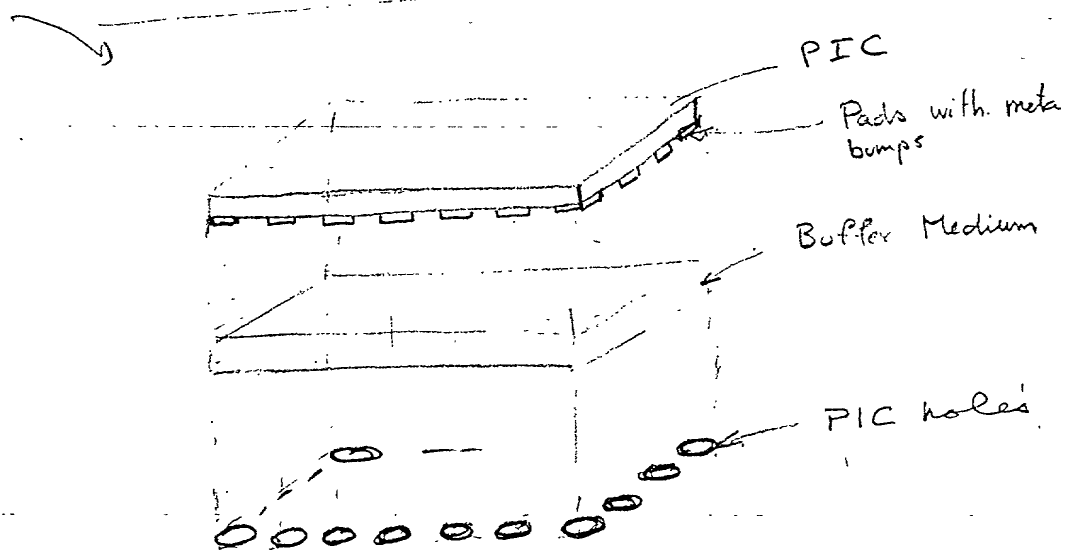
- S selects output or input buffer.
- E selects the pad to connect to test port

FIGURE 7c

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Printed-Circuit Surface

bevel



Buffer Medium ① Elastomeric material made of polymer with z-axis conductors
25-100 mils thickness

② Carrier of Button springs

FIGURE 20

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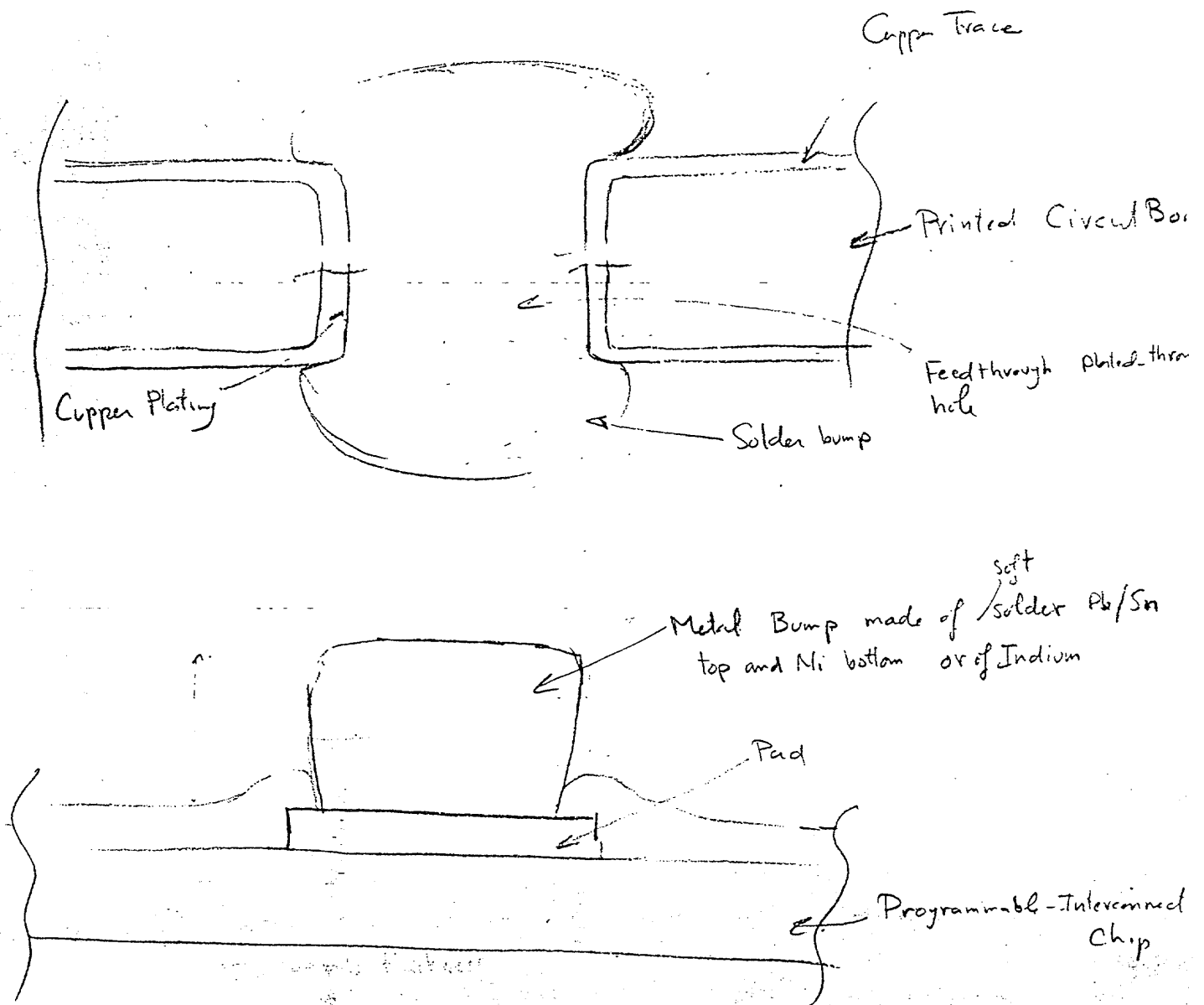


FIGURE 86